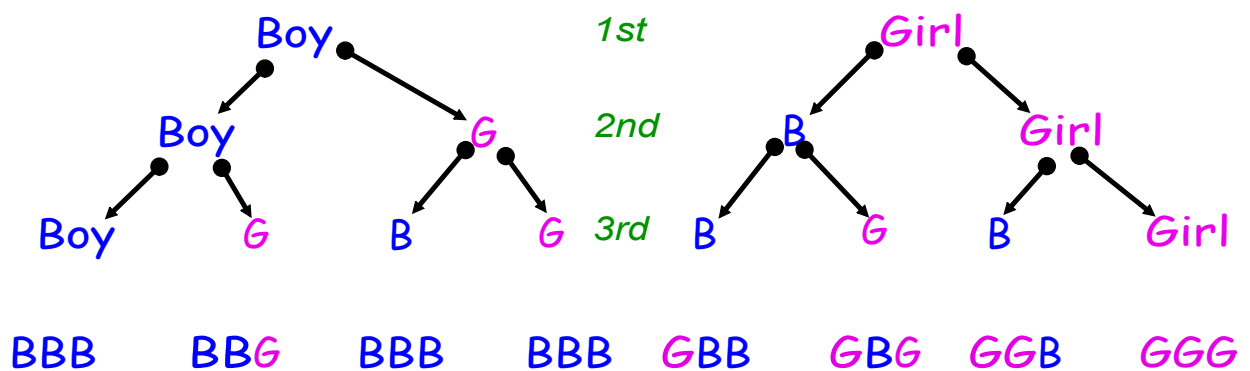


What is the sample space for a family choosing to have three children? List the boy-girl combinations

### Tree Diagram



There are 8 possible outcomes.

*What do you think is a disadvantage of tree diagrams?*

The **Fundamental Counting Principle** says

...if there are  $m$  choices the first time and  $n$  choices the next, then there are  $m$  times  $n$  possible outcomes.

The choices for 1st, 2nd and 3rd child are a boy or girl, therefore there is 2 times 2 times 2 combinations, 8.